

REMARKS/ARGUMENTS

Claims 1 through 8 are pending in the application. Claims 9-22 have been cancelled herein. Claim 1 has been amended. Claims 3, 4, 6, and 7 have also been amended to correct minor informalities. Reconsideration of the pending claims in view of the remarks below is respectfully requested.

Election Requirement

Applicant respectfully elects to prosecute the claims directed to Group I, claims 1-8, drawn to an electrodialysis method, classified in class 514, subclass 758.

Applicant requests that the non-elected claims, claims 9-22, be cancelled without prejudice or disclaimer.

Turning to the specific objections and rejections:

Claims Objection

1. The Examiner has requested that a space be inserted between "1.8" and "N" throughout the claims. The claims 1, 3, 4, 6, and 7 have been amended to make the specified changes. Therefore, Applicants submit that the objection has been addressed and respectfully request the Examiner to withdraw the present objection.

Claims Rejections - 35 U.S.C. § 112

2. Claims 6 and 7 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which Applicants regard as the invention. Specifically, the Examiner points out that claim 6 and 7 recite "...a pH or 8.0 or greater." Applicants have amended claim 6 to recite "a pH ~~or~~ of 8.0 or greater." The Examiner rejects claim 7 as being dependent on an indefinite claim, which Applicants have now clarified. Therefore, Applicants submit that the rejections to claim 6 and 7 have been addressed and respectfully request the Examiner to withdraw the present rejection.

Claim Rejections - 35 U.S.C. § 102

3. Claims 1-4 are rejected under 35 U.S.C. § 102(b), as being anticipated by Mani (U.S. Pat. No. 6,221,225) (herein "Mani").

Applicants have amended independent claim 1 to specify that the electrodialyzed composition falls "between about 0.002 N to less than 1.0 N." Support for the amendment may be found at least at page 6, second paragraph of the application as filed.

Mani is directed to "an apparatus and process [for producing] salts by an electrodialysis operation."¹ In comparison, the present application is directed to methods for providing an electrodialyzed composition having desirable organoleptic qualities, a raised or lowered pH, and/or reduced anion and/or cation concentrations.

As such, the Normality of the electrodialyzed composition of Mani is higher than the Normality of the electrodialyzed composition claimed in the present application. For instance, Mani teaches, "The concentration of the acid product that can

¹ See Abstract of Mani

be made is in the order of 1-6 N."² Mani does not describe any electrodialed composition having a Normality "between about 0.002 N to less than 1.0 N" as claimed in the present application.

The Examiner suggests that Mani teaches an electrodialed composition where "the concentration of the total cations of the resulting solution is less than 0.6 N" because the pH of 2.86 is achieved in the resulting solution. However, as is appreciated by those of ordinary skill in the art, converting pH to Normality is not a simple conversion and requires numerous data points.

pH is "the negative of the logarithm of the molar hydrogen-ion concentration."³ Normality is "the number of equivalents of a substance dissolved in a liter of solution."⁴ An equivalent "in an acid-base reaction, [is] the quantity of acid that yields 1 mol H⁺."⁵

Thus, to determine the Normality of a solution the equivalent must first be calculated. In order to calculate the equivalent, the accurate acid-base reaction occurring within the solution must be determined.

Mani does not set forth the exact acid-base occurring in the electrodialed composition. In Example 1, Mani acknowledges that "the base tank was initially charged with dilute ammonium hydroxide solution and as the ED process operated, the product ammonia solution **overflowed** from the base recycle tank."⁶ *Note that the degree of dilution is not discussed, nor is the diluting substance described.* Mani

² See column 4, line 57-58 of Mani

³ Ebbing. *General Chemistry*. 4th ed. Boston: Houghton Mifflin Company, 1993.

⁴ Ebbing. *General Chemistry*. 4th ed. Boston: Houghton Mifflin Company, 1993.

⁵ Ebbing. *General Chemistry*. 4th ed. Boston: Houghton Mifflin Company, 1993.

⁶ See column 6, lines 36-39 of Mani

further describes, "Small amounts of dilute NaCl solution were added to the base loop to improve its conductivity."⁷ *Note the amount of NaCl solution, the degree of dilution, nor the diluting substance described.* The end composition included at least lactic, ammonia, and divalent metals.⁸

Thus, it is impossible to determine the Normality of the end solution described in Example 1 of Mani as relied on by the Examiner because:

1. The exact acid-base reaction occurring in the electrodialed composition is not described
2. There are likely several acid-base reactions occurring in the electrodialed composition (each of which would affect the overall Normality of the solution)
3. The experiment was compromised by the loss of ammonia solution when the base recycle tank overflowed
4. Details such as amounts of reagents, type of diluting substance, and degree of dilution were not described

Therefore, because Mani does not teach an electrodialed composition having a Normality "between about 0.002 N to less than 1.0 N" as claimed in the present application, each and every limitation of the claimed invention is not anticipated. Thus, for at least the reasons stated above, Applicants respectfully request that the present rejection be withdrawn from each of claims 1-4.

4. Claims 1-5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Quoc et al. (J. Agric. Food Chem. 2000, 48, 2160-2166) (herein "Quoc").

⁷ See column 40, lines 40-41 of Mani

⁸ See column 40, lines 44-46 of Mani

The present application is distinct from Quoc in that the present application is directed to "contacting an aqueous solution having a total anion or total cation concentration of 1.8 N or less with a membrane electrodialysis system." Furthermore, the claimed application further specifies "an electrodialyzed composition having a total anion or total cation concentration between about 0.002 N to less than 1.0 N, individual cation or anion concentrations of 0.6 N or less." Quoc does not mention or suggest **ANY** Normality values.

Because Quoc does not describe the Normality values claimed in the present application, each and every element of the claimed invention is not anticipated by Quoc. Thus, for at least the reasons stated above, Applicants respectfully request that the present rejection be withdrawn from each of claims 1-5 and 8.

Claim Rejections - 35 U.S.C. § 103

5. Claims 1 and 5-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Quoc et al. (J. Agric. Food Chem. 2000, 48, 2160-2166) (herein "Quoc") in view of Hatzidimitriu (US 4,936,962) (herein "Hatzidimitriu").

The Examiner admits that "Quoc et al do not expressly disclose a method wherein the electrodialyzed composition has a total anion concentration of 0.5 N or less..."⁹ In fact, Quoc makes no mention of **ANY** of Normality values specified by the claimed invention. Similarly, Hatzidimitriu does not make **ANY** mention of any of the Normality values specified by the claimed invention.

Therefore, because Quoc and Hatzidimitriu do not teach

⁹ See page 7 of the OA mailed 2/16/2006

either separately or in combination **ANY** of the Normality values specified by the claimed invention, each and every element of the claimed invention is not anticipated by the combination of Quoc and Hatzidimitriu. Thus, for at least the reasons stated above, Applicants respectfully request that the present rejection be withdrawn from each of claims 1 and 5-8.

CONCLUSION

By way of the remarks and amendment provided herein Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain any outstanding issues that require adverse action, it is respectfully requested that the Examiner telephone James Krueger at (312)577-7000 so that such issues may be resolved as expeditiously as possible.

The Commissioner is hereby authorized to charge any additional fees which may be required by Applicants to Deposit Account No. 06-1135.

Respectfully submitted,

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